

Patent Claims

1. Housing structure for mounting optical elements, in particular of a projection lens housing in a projection exposure system for manufacturing semiconductor elements, attachment locations, which have connecting parts, for connection to a supporting structure being provided on structural elements, wherein supporting elements (12), which are provided with mounting flanges (13) for connection to the supporting structure (11), act on the structural elements (9, 10) in such a way that supporting forces, in particular weight forces, are taken up essentially by pressure forces and shear forces.

2. Housing structure according to Claim 1, wherein the connections between the structural elements (9, 10), the supporting elements (12) and the associated mounting flange (13) are effected essentially by means of adhesive surfaces (17a, 17b, 17c).

3. Housing structure according to Claim 1, wherein the structural elements (9, 10) are made of materials to which the group comprising glass, ceramic and glass ceramic belongs.

4. Housing structure according to Claim 1, wherein the supporting elements (12) comprise a metal supporting element (12).

5. Housing structure according to one of Claims 1 to 3, wherein at least three supporting elements (12), distributed over the periphery, act on the structural elements (9, 10).

6. Housing structure according to Claim 5, wherein the supporting elements (12) act on an at least approximately centrally arranged structure reinforcing plate (10).

7. Housing structure according to one of Claims 1 to 6, wherein the supporting elements (12) each have at least approximately an L-shape with a mounting flange (13).

8. Housing structure according to Claim 7, wherein the associated structural element (9, 10) lies on a horizontal leg of the L-shape and in that the vertical leg of the L-shape lies against the external periphery of the structural element (9, 10), the mounting flange (13) adjoining the vertical leg of the L-shape in at least approximately the horizontal direction.

9. Housing structure according to Claim 8, wherein adhesive surfaces are arranged between the two legs of the L-shape of the supporting element (12) and the associated structural element (9, 10).

10. Housing structure according to Claim 7, 8, or 9, wherein the structural element (9, 10) is, in the region of the horizontal leg of the L-shape, provided with a through-bore (20), through which a prestressed screw (18a) is passed and connected to the horizontal leg (15) of the L-shape.

11. Housing structure according to Claim 7, 8 or 9, wherein the structural element (9, 10) is, in the region of the vertical leg (16) of the L-shape, provided with a through-bore (21), through which a prestressed screw (18b) is passed and

by means of which the vertical leg (16) of the L-shape is connected to the structural element (9, 10).

12. Housing structure according to one of Claims 1 to 5, wherein the supporting elements (12) each have a U-shape seen in cross section, from which the mounting flange (13) branches off, the associated structural element (9, 10) being received between the two U-legs.

13. Housing structure according to Claim 12, wherein the structural element (9, 10) is provided with a through-bore (20), through which a screw (18c) is passed, which is connected to the two U-legs (15, 22) of the supporting element (12) in such a way that the two U-legs (15, 22) exert a prestressing force on the structural element (9, 10).

14. Housing structure according to one of Claims 1 to 5, wherein the supporting element (12) has two clamping plates (15, 22) arranged at a distance from one another, between which the associated structural element (9, 10) is received, a peripheral plate (16) running parallel to the outer wall of the structural element (9, 10), and a mounting flange (13) connected to the two clamping plates (15, 22) and the peripheral plate (16).

15. Housing structure according to Claim 14, wherein the mounting flange (13) has at least approximately a T-shape, one T-leg forming the mounting flange, and connecting elements (18e), by means of which the two clamping plates (15, 22) and the peripheral plate (16) are connected to the mounting flange (13), being arranged on a leg (24) arranged at right angles to the said leg.

16. Housing structure according to Claim 15, wherein the connecting elements are designed as screws (18e) with spring elements (19).

17. Housing structure according to one of Claims 14 to 16, wherein adhesive surfaces (17a, 17b, 17c) are arranged between the clamping plates (15, 22), the peripheral plate (16) and the structural element (9, 10).

18. Housing structure according to one of Claims 14 to 17, wherein the two clamping plates (15, 22) are provided with screws (18d), which are screwed into the structural element (9, 10) in such a way that a prestress is exerted on the adhesive surfaces (17a, 17c).